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| SIMPSON & SIMPSON, PLLC 5555 MAIN STREET WILLIAMSVILLE, NY 14221-5406 | | | ROBINSON, MARK A | |
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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 09/817,646
Filing Date: March 26, 2001
Appellant(s): ENGELHARDT, JOHANN

C. Paul Maliszewski
For Appellant

EXAMINER'S ANSWER

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This is in response to the appeal brief filed 8/11/04.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 1-6,8-18,20-35.

Claims 7 and 19 been canceled.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is deficient because it fails to mention that the present invention also encompasses a microscope assembly comprising reference points (detection stop 12; objective pupil 9), wherein the light source(1) is alignable with respect to the reference points.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that the claims stand or fall together.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

| | | |
|-----------|----------|---------|
| 5,035,476 | Ellis | 7-1991 |
| 5,214,492 | LoBianco | 5-1993 |
| 5,681,987 | Gamble | 10-1997 |

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

Claims 12-18,20-27,30,31,34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis 5035476 in view of Gamble 5681987.

Ellis shows an apparatus for aligning the optical beam path of a microscope, including an illumination stop(53) and detection stop(65), by providing the center of the detection

stop as a first reference point and providing a second reference point. Note that the focus of the light source or the center of the objective(61) pupil shown by Ellis may be considered as the second "reference point" with which the light source is aligned. This only requires the system to include a detection aperture and another selected "reference point," with a beam path being defined between the two points. Further, note that when the system's elements are aligned for operation, they will be aligned or alignable with respect to the reference points.

Ellis does not teach the light source to be adjustable. However, adjustable light sources are known and an example of such is shown by Gamble (note fig. 1 and column 7, especially lines 12-15). Note that Gamble's arrangement allows for lateral and rotational adjustment of the light source. It would have been obvious to the ordinarily skilled artisan at the time of invention to include the adjusting arrangement of Gamble with Ellis' light source in order to allow for alignment of the light source with the other elements of the optical system.

Regarding claims 14-17, Ellis does not teach the types of light sources found in these claims. However, each is a well known type of microscope illumination and would have been obvious to the ordinarily skilled artisan at the time of

invention as an obvious art-recognized equivalent of the light source shown by Ellis.

Regarding claims 23-27, although not taught specifically by Ellis, movement of the light source and/or aperture (stop) via lateral shifting or rotation is known in the prior art. It would have been obvious at the time of invention to move the light source assembly in such a manner when initially aligning the system's elements to enable proper functioning of the microscope.

Claims 1-6,8-11,28,29,32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis 5035476 in view of Gamble 5681987 and LoBianco 5214492.

Ellis shows a method for aligning the optical beam path of a microscope, including an illumination stop(53) and detection stop(65), by providing the center of the detection stop as a first reference point (or plane) and providing a second reference point (or plane). Note that the focus of the light source or the center of the objective(61) pupil shown by Ellis may be considered as the second "reference point" with which the light source is aligned. This only requires the system to include a detection aperture and another selected "reference point," with a beam path being defined between the two points.

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Further, note that when the system's elements are aligned for operation, they will be aligned or alignable with respect to the reference points (and light will precisely strike the detection stop).

Ellis does not teach adjusting the light source in an iterative manner. However, adjustment of light sources is known and an example is disclosed by Gamble (note fig. 1 and column 7). Note that Gamble's arrangement allows for lateral and rotational adjustment of the light source for alignment. Further, LoBianco discloses an iterative method for adjusting an emitted light beam in an optical system for alignment (note the paragraph bridging columns 6-7). It would have been obvious to the ordinarily skilled artisan at the time of invention to adjust Ellis' light source as taught by Gamble using an iterative method as taught by LoBianco in order to allow for alignment of the light source and emitted light beam with the other elements of the optical system.

Regarding claims 8 and 33, although not taught specifically by Ellis in view of Gamble and LoBianco, movement of the illumination aperture (stop) via lateral shifting or rotation is known in the prior art. It would have been obvious at the time of invention to move the stop in such a manner when initially

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aligning the system's elements to enable proper functioning of the microscope.

(11) Response to Argument

Appellant has argued that the primary reference to Ellis is not concerned with alignment in a microscope environment and contains no teaching or suggestion to modify the light source.

In response, it should be noted that the suggestion or teaching to combine the references forming the basis of the rejection is not found in the primary reference to Ellis, but rather in the secondary reference to Gamble, who teaches adjustment of the microscope light source for the express purpose of alignment.

Appellant has also argued that conventional microscopes do not use a point light source, and thus alignment by moving the light source is not possible.

However, Ellis clearly shows point light source illumination via the laser(51) and/or pinhole(53) arrangement.

Appellant has also argued that making the light source adjustable, as shown in Gamble, would increase the number of parts in Ellis' microscope, this being counterproductive to one of Ellis' goals of reduction of parts in the microscope.

However, making Ellis' light source adjustable as taught by Gamble ensures device alignment so that the microscope functions

properly (i.e. the elements must be in alignment so that light follows its appropriate beam path). Further, an *adjustable* light source still functions as a light source, so it is not seen that the proposed modification negatively impacts the microscope device's function. Further, it should be noted that the claim combinations are open-ended and thus are not limited only to the structural features contained therein.

Appellant has also argued that Gamble is not concerned with alignment of the microscope and contains no teaching regarding any type of alignment.

However, this is not correct. Appellant cites on page 8 of the brief a portion of Gamble relied upon by the examiner which specifically teaches adjustment of the light source for the purpose of alignment (Gamble, col. 7 lines 13-14).

Appellant has also argued that neither Ellis nor Gamble suggests use of an adjustable point light source for alignment in a confocal microscope.

However, "confocal" is not found in the broad independent claims to which appellant's arguments are presumably directed. Further, Ellis in view of Gamble do in fact teach an adjustable point light source for alignment as discussed both above and in the rejection, with Ellis' microscope being the confocal type.

Appellant has also argued that Ellis would not look to a nonanalogous system such as Gamble's, which does not address alignment.

However, Gamble does teach a microscope system and is concerned with alignment as noted above. Further, it should be noted that all microscope systems will necessarily be concerned with alignment since the elements must be properly aligned in order for the system to function properly. Thus, the combination of these references is seen to be appropriate.

Appellant has also argued that Gamble would not look to the Ellis system to solve Gamble's problem. However, this is not the basis for the rejection.

Appellant has also argued that Ellis does not teach a detection stop, optical reference points, or a focus of the light source, and that these elements would not make sense in Gamble's microscope.

In response, it should be noted that Ellis does in fact teach a detection stop(65) and a focus of the light source (at several locations). Further, the elements in the microscope systems of the references do not have to be labeled as a "reference point" to function as one. As the light source of Ellis in view of Gamble will be aligned with respect to the elements of the system, said light source will also be aligned

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with definable reference points located on the optical path. Thus, Ellis in view of Gamble meets the limitations of first and second "reference points." Regarding the argument that these elements would not make sense in Gamble's microscope, this is the reverse of the basis of the rejection and is irrelevant.

Appellant has also argued that Ellis does not teach an adjustable light source, while Gamble does not teach first and second reference points.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Appellant has not provided further specific arguments for claim 30 and has merely repeated the arguments made above with respect to claim 12. In response, the corresponding arguments made by the examiner are repeated.

Appellant is correct concerning the grouping of claim 23.

Appellant has argued with respect to claim 1 that the third reference to LoBianco does not teach alignable microscope components nor light source, nor a detection stop, nor reference

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points, and has incorporated the previous arguments made with respect to Ellis and Gamble.

However, these features are met by Ellis in view of Gamble as noted previously. LoBianco was cited merely as evidence that iterative methods for alignment were known in the art. The examiner's responses set forth above are repeated.

Appellant has not provided further specific arguments for claim 28 (and claims dependent thereon) and has merely repeated the arguments made above with respect to previous claims. In response, the corresponding arguments made by the examiner are repeated.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Mark Robinson
October 29, 2004


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